

ProfiLine



 Instruction manual

 **NORDSTEN**
 **KONGSKILDE**

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Foreword

KONGSKILDE would like to congratulate you on your new ProfiLine seed drill which we are convinced will serve you well in your work.

In order to use the machine correctly and safely, we recommend that you familiarise yourself with it by studying this instruction manual.

The correct use of the machine, along with careful maintenance, lubrication and storage, will help to keep it in good working order.

TECHNICAL SPECIFICATIONS

Specification	Unit	PROFILine 300	PROFILine 400	PROFILine 450
Year of production	-			
Serial number	-			
Working width*	cm	300	400	450
Transport width*	cm	300 (313)	247***	247***
Height (without markers)	cm	146	146	146
Transport height (with markers)	cm	216	216	216
Lenght max.**	cm	298	298	298
Hopper volume	dm ³	741	1052	1201
Hopper capacity (wheat)	kg	555	789	900
Filling height	cm	135	135	135
Weight max.**	kg	1041	1080	1485
Tyres - ver. I	-	6.00/16	10/80x12	10/80x12
Tyres air pressure - ver. I	MPa	0,12	0,24	0,24
Tyres - ver. II	-	10/80x12	-	-
Tyres air pressure - ver II	MPa	0,24	-	-
Transmission	-	Vario-K	Vario-K	Vario-K

Optional equipment:

Lenght with Max-flow rear harrow	cm	190	190	190
Lenght with Wing-flow rear harrow	cm	214	214	214
Lenght with Classic-flow rear harrow	cm	190	190	190
Number of suffolk coulters (Euro)	pcs.	21/25/29	33	37
Distance between suffolk coulters	cm	14/12/10	12	12
Number of single disc coulters	pcs.	21/23	31	35
Distance between single disc coulters	cm	14/13	13	14
Number of double disc coulters	pcs.	23	31	35
Distance between double disc coulters	cm	14/13	14/13	14/13
Number rows of coulters	pcs.	2	2	2
Distance between rows of coulters	cm	33	33	34

Cooperating tractor:

Hitch category	Cat.	Cat.2	Cat.2	Cat.2
Pulling force	kN	1,4	2	2
Working speed	km/h	5 - 8	5 - 8	5 - 8
Tractor's lift requirements	kg	1380	1430	1960

* - data for base machine without rear harrow and pre-emergence markers

** - data for fully equipped machine, without seeds and with lowered pre-emergence markers

*** - transport on public roads only on transporting trolley

Weight of transporting trolley for PROFILine 400 and 450 is additional 100 kg.

Equipment

The seed drill can be fitted with the following equipment:

Following harrow type Max-Flow.

The following harrow has rearward-facing tines which ensure that plant residue, such as straw and similar materials, is less likely to drag. In addition the stress on the disc coulters is reduced.

Following harrow type Wing-Flow. The following harrow has rearward-curving tines which ensure that plant residue is less likely to drag. In addition the stress on the disc coulters is reduced.

A set of pressure springs for the Max-Flow and Wing-Flow following harrows.

Following harrow type Twin-Flow. A double following harrow can be mounted instead of the traditional following harrow by fitting a double following harrow tine on the hindmost set of Euro coulters.

Electronic tramlining device AGRO TRAM 2100. This can be mounted on the seed drill in order to make cultivating tracks of up to nine times the seed drill's width. AGRO TRAM 2100 is equipped with seed shaft control and acremeter for measuring both part and total area and monitoring the electronic clutches and rotations.

Electronic level control indicator for hopper indicator, can be used in connection with AGRO TRAM 2100. Optional equipment.

Extension cable for AGRO TRAM 2100.

Mechanical directly readable ha-meter.

Mechanical adjustment of sowing rate during work. The adjustment is made from the tractor's cab.

Set of wheel track eradicators for tractor wheels.

Wheel eradicators.

Fine seed fingers for reducing the sowing rate.

Soft seed rollers to reduce the damage to large seed.

Fine seed rollers for sowing of small seeds.

Depth limiters for Euro coulters.

Depth limiters for disc coulters.

Coulter foot for mounting on the outer coulter behind the driving wheels of the seed drill. The coulter foot loosens the compacted soil surface in the seed drill's wheel tracks, such that the seed line is correctly placed.

Grass seed coulter foot for mounting on the Euro coulters. Enables sowing of grass seed in 80 mm band widths when the soil is suitably dry and free of foreign bodies.

Seed hopper for sowing of grass and slug pellets.

Set of sieves for screening seeds when filling the hopper

Physical markers for making cultivation tracks for fertilisation and spraying before germination. Only available with AGRO TRAM 2000 or 2100.

Set of wheel track eradicators for tractor wheels

Transport truck.

Loading platform.

Safety Precautions

This instructions and safety notes in this instruction manual must be followed.

Safety distances

The safety distance to the seed drill while in operation is 4 metres. Persons must under no circumstances be on the seed drill while it is running.

Safety when lifting the seed drill

The marked cutting eyes should be used when lifting the seed drill and when carrying out repair of the seed drill's main frame.

Safety precautions concerning guards

Guards for chains, gear wheels and rotating shaft ends etc. must be fitted to comply with the required safety regulations.

Loose guards, which include calibration trays and seed hopper lid, should be fitted and closed when the machine is running.

The agitator shaft in the hopper is not shielded. Therefore, to avoid injury, manual stirring of the sowing material whilst the machine is running must be avoided.

Fixed guards should be removed and fitted using tools.

Safety precautions whilst driving

When driving on public roads, road traffic laws concerning lights, safety, etc. should be followed. Lift arm pins and top link pins should be properly secured in order to avoid accidents.

On safety grounds, marker arms should always be locked in position when driving on public roads. Locking is carried out using lock fittings which are mounted on the locking pin and secured with the ring pin. See figure 2G.

Safety precautions when parking

Always place the seed drill on firm, horizontal ground when it is removed from the tractor. Ensure that the support legs are mounted and secured by the locking pin.

Safety when cleaning

Cleaning and maintenance of the seed drill should only be carried out when the machine is not running.

Safety precautions concerning hydraulics

Hydraulic systems with a working pressure of up to 200 bar must be treated with care. When carrying out repairs, the hydraulic system must be without pressure. Air in the hydraulic system can lead to incorrect functioning of the machine, and thus should be expelled before the machine is used.

Safety when mounting tyres

Tyre mounting without sufficient expertise or the necessary special tools may lead to serious accidents.

Safety precautions concerning tightening

Tighten all bolts after the first 25 hours of operation. All bolts should be subsequently tightened before the start of each season.

Product liability

Kongsilde's product liability covers machines which are defective on delivery. Product liability no longer applies if modifications are made to the seed drill or its accessories without Nordsten's explicit written permission.

It is also a condition of the product liability that the seed drill is only used for purposes described in this instruction manual or for purposes which have Nordsten's permission.

Finally, it is also a condition that the seed drill is used with all fixed guards fitted.

Mounting and adjustment

Commissioning the seed drill

Immediately after receiving the drill, it and any extra equipment should be checked to ensure that the items received are in accordance with the order and that there are no defects or missing parts. Any claims should be immediately forwarded to the dealer.

In the case of damage occurring during transport, claims should be forwarded to the transport firm used.

Otherwise reference is made to Kongskilde's usual terms of sale and delivery.

The coulter settings - and thus their mutual spacing - may have changed during transport. The coulter settings should therefore be checked (see this section under coulter spacing) and any necessary adjustments carried out as described.

Check that the chains between the driving wheel, gearbox, agitator shaft and sowing shaft are correctly adjusted. This is particularly important if extra equipment with chain drive has been fitted. Any necessary adjustments should be carried out as described in section 5.

Chains and linkages should be lubricated with oil.

Tyre pressures

The correct tyre pressure for the driving wheels is 2,4 kg/cm² = 0,24 MPa = 34 lb. The tyre pressures should be checked regularly.

Since the tyre pressures influence the sowing rate, using the tyre pressures specified above is recommended.

Mounting and adjustment

Coupling to the tractor

The position handle is placed in a neutral position such that the lift arms can move freely for the whole lifting area.

The position handle is placed in a neutral position such that the lift arms can move freely for the whole lifting area.

The check chains or rods for the lift arms should be fitted.

If the lift arms' lifting rods have slotted holes, then these should be used. The seed drill can then follow the soil surface more effectively.

The supporting shaft should be placed in the eyes of the lift arms and locked in position with ring pins on both sides.

The tractor is reversed in front of the seed drill so that the supporting shaft fits into the snap coupling. The fitting of the snap coupling should be checked on both sides. See figure 2A.

Mount the top link as parallel with the lift arms as possible.

The hydraulic system for the track markers can be connected either to a double or a single acting outlet of the tractor.

Adjust the top link length so that the lid of the seed hopper is horizontal with the appliance in working position. See figure 2B.

Lift the seed drill.

Push the supporting legs upwards and put in the ring pin

Disengagement from the tractor, parking

Before disengagement from the tractor, both supporting legs should be pulled down into the holder and secured with ring pins.

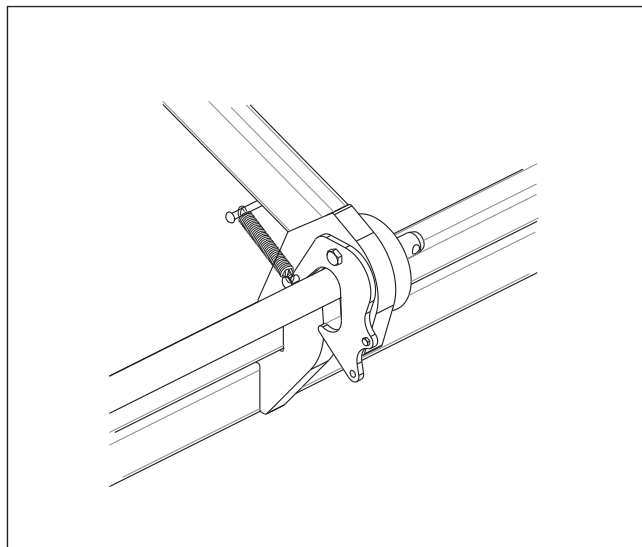


Figure 2A. Automatic locking bracket.

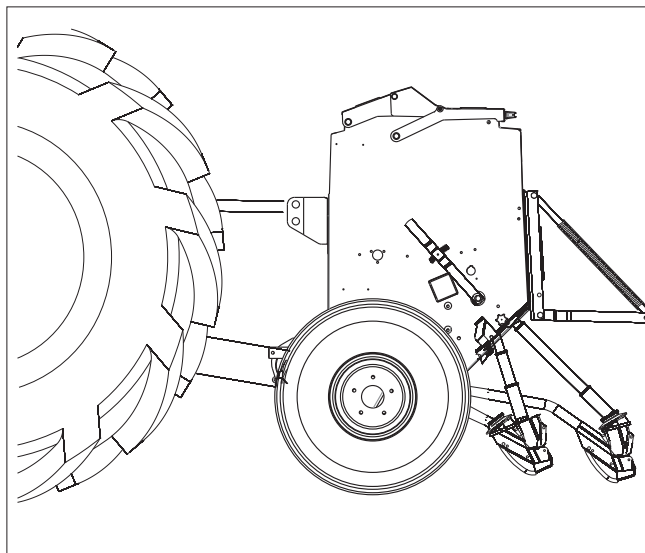


Figure 2B. The top link is adjusted so that the hopper is horizontal.

Row distance

Row distance

Changing and adjusting the row spacing can be carried out by moving the suspension arms and clamp for each coulter sideways on the coulter bar. This can be done after the bolts under the clamps have been loosened. See figure 2C.

The distance between the coulters is measured directly on the coulters themselves - and thus not on the suspension arms. The use of a measuring implement with the actual row spacing marked is recommended.

When changing the row spacing, measurement should be made from the central coulter, which should be placed in the exact centre of the seed drill. Each coulter can then be adjusted to the desired distance from the centre coulter. See figure 2D.

Remember to tighten all bolts after adjustment.

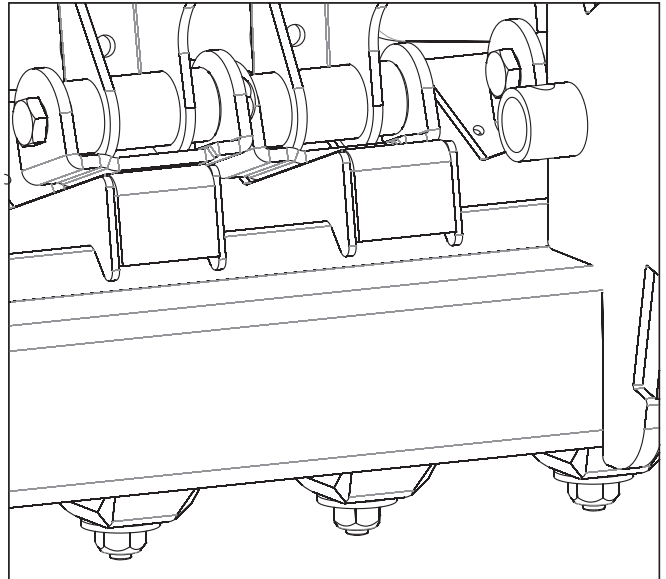


Figure 2C. Clamp with bolt.

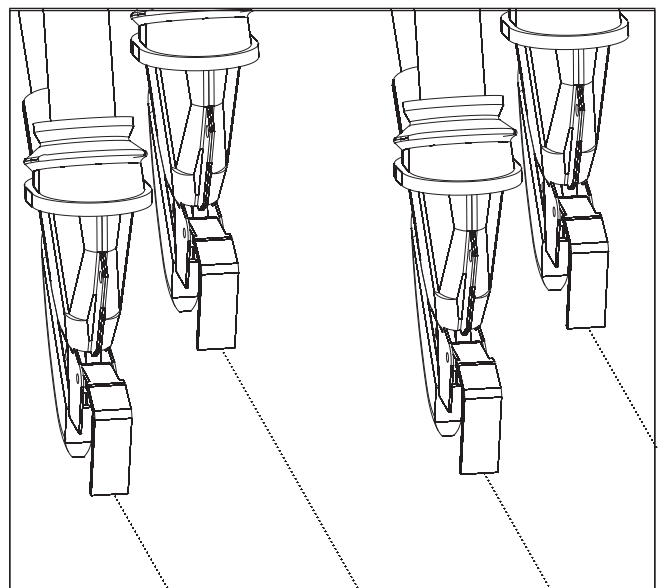


Figure 2D. The row distance is measured from the center coulter.

Marker shifter

Markers

The seed drill is fitted with hydraulic markers.

A single-acting hydraulic take-off from the tractor is used which activates a shift valve (see figure 2C) in the following way.

On supplying hydraulic pressure to the marker system, both markers will be vertical.

By removing hydraulic pressure from the marker system, one marker will move into its working position.

Shifting between the markers (i.e. between left and right) is done by supplying, and then removing, hydraulic pressure from the system.

If both markers are wanted in their working position, the marker system is activated in the following way:

The marker which is in its working position is raised about 1 metre. The hydraulic pressure is then removed from the system, after which both markers will move into their respective working positions.

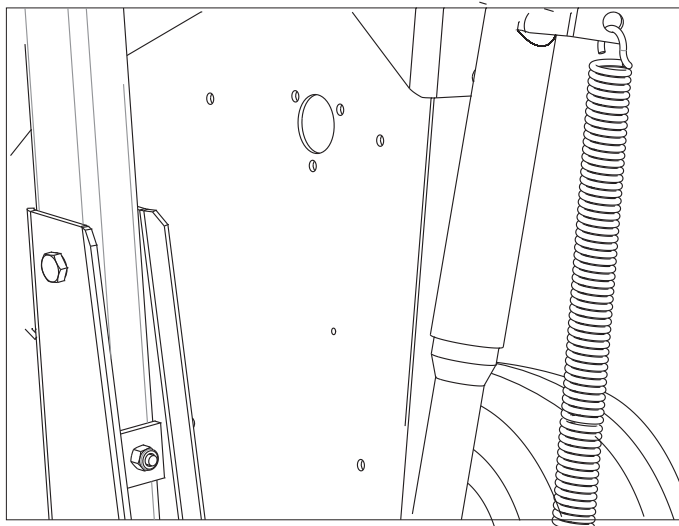


Figure 2F. Spring bolt for marker arm

Marker arms, spring bolt

The marker arms are equipped with a spring bolt which is released when overloaded. Carrying an extra spring bolt (size M6 x 75 quality 8.8) is recommended during sowing work. See figure 2F.

Marker arms in transport position

When transporting the seed drill on public roads, the marker arms must be locked in position. They can be secured using lock fittings, which are fitted to the lock pin and secured with a ring pin (see figure 2G).

In order to reduce the transport height on 4.0 and 4.5 m machines, the marker arms on these machines are articulated. The link must be locked with a locking bolt secured with a ring pin both when "folded" during transport and when the marker arms are in working position. See figure 2H.

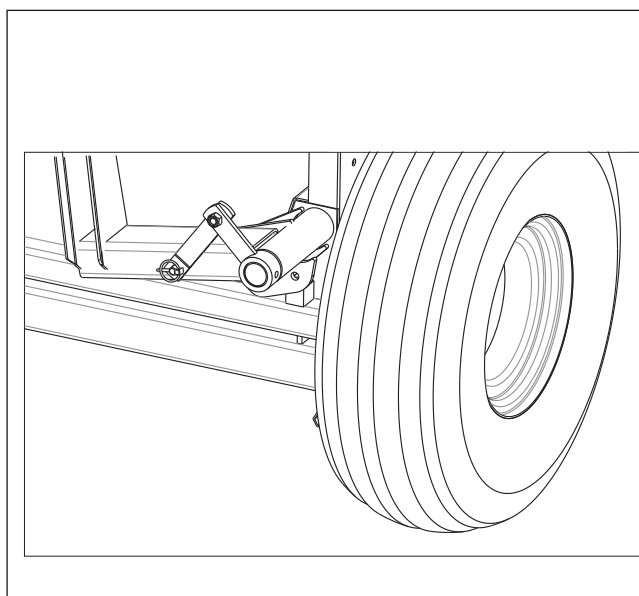


Figure 2G. Lock fittings for transport

Mounting of the following harrow

The following harrow is delivered as harrow sections and mounting parts.

The mounting parts include:

- U-brackets
- harrow arms
- connection pipes
- following harrow mountings.

Mounting is carried out as follows:

- 1.U-brackets are mounted on the seed drill.
- 2.Harrow arms are fitted into the U-brackets.
- 3.Connection pipes are fitted between the harrow arm and U-bracket.
- 4.Following harrow mountings are mounted onto the harrow arms.
- 5.The harrow sections are bolted together and fitted into the following harrow mountings.

See also figure 2J.

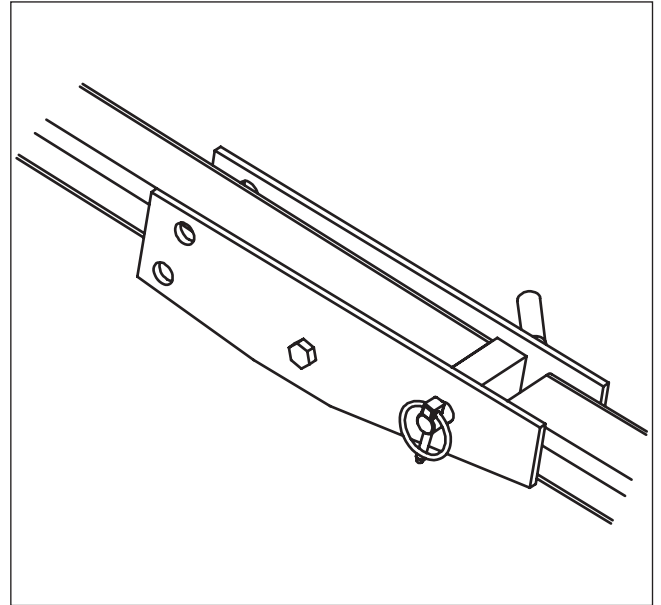


Figure 2H. "Folded" marker arm

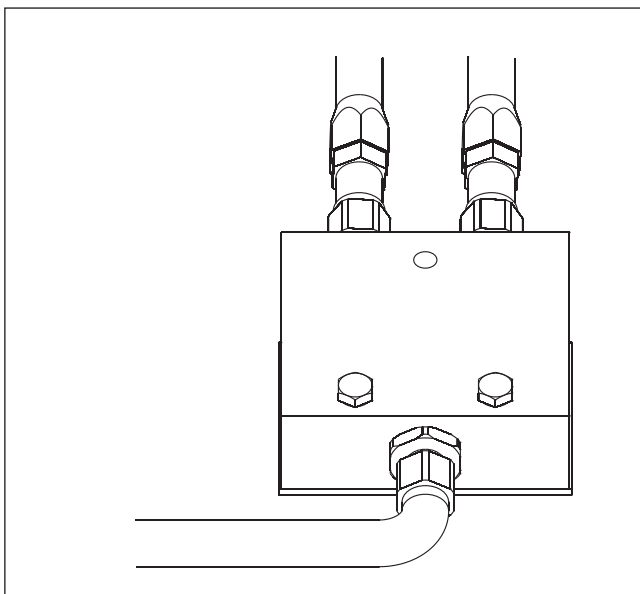


Figure 2C. The valve of the seed drill for the hydraulic marker

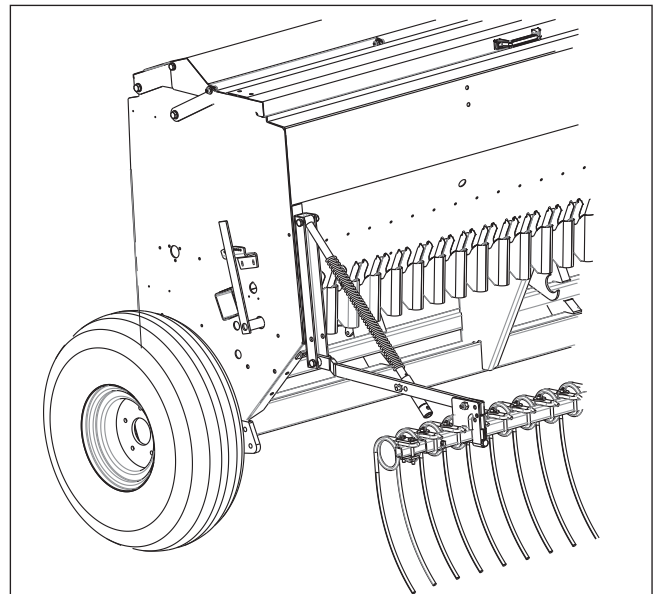


Figure 2J. Mounting the following harrow

Setting up the drill

Generally

Before sowing begins, the following should be carried out:

- Calibration of the drill
- Adjustment of coulter pressure/sowing depth
- Adjustment of the markers.

Calibration of the drill

Please follow the instructions below for accurate calibration of the seed drill.

Agitator shaft

When sowing large seeds such as peas and beans, disengagement of the agitator shaft in the bottom of the seed hopper is recommended. Further information can be found in the section on special crops on page 14.

Disengagement of the agitator shaft is carried out by taking off the ring pin in the chain wheel at the end of the shaft. See figure 3A.

Note that the seed drill is delivered with the agitator shaft disengaged. The ring pin can be found in a plastic bag in the seed hopper.

Bottom flaps

The bottom flaps should be as close as possible to the seed wheels without damaging or squeezing the seed.

The bottom flaps can be adjusted using the handle at the end of the hopper. See figure 3B.

The scale setting for different seed sizes should be as follows:

Fine seed	:	1
Corn	:	2-3
Peas, etc.	:	3-6

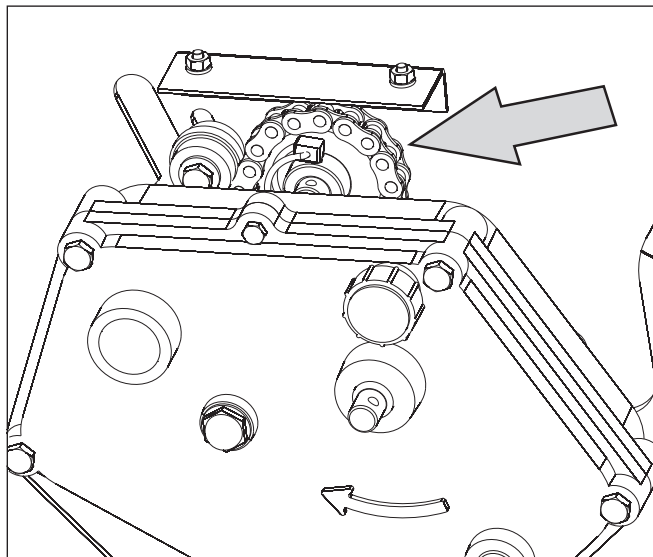


Figure 3A. Disengagement of agitator shaft.

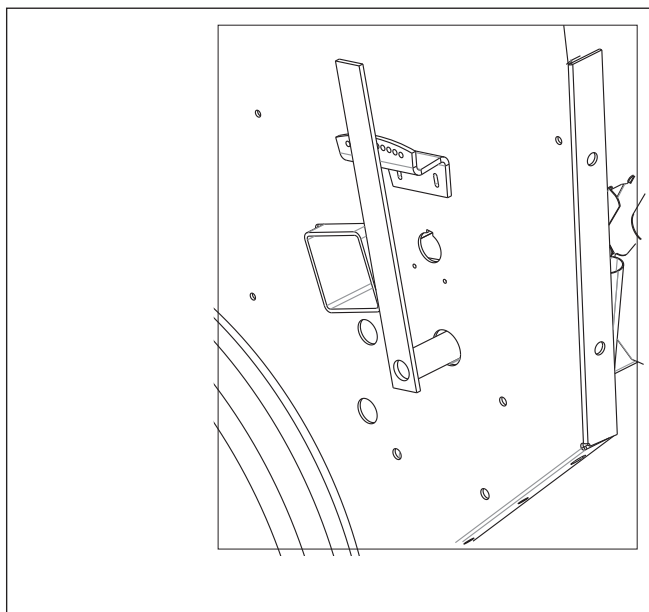


Figure 3B. Handle for bottom flaps.

Calibration

Seed housing shutters

The seed housing shutters should all be opened as high as possible, but without the seed running out over the sowing wheels.

The seed housing shutters have four positions and can be adjusted individually by moving them up and down.

In the top position (position 1), the shutters are completely open. (See figure 3C).

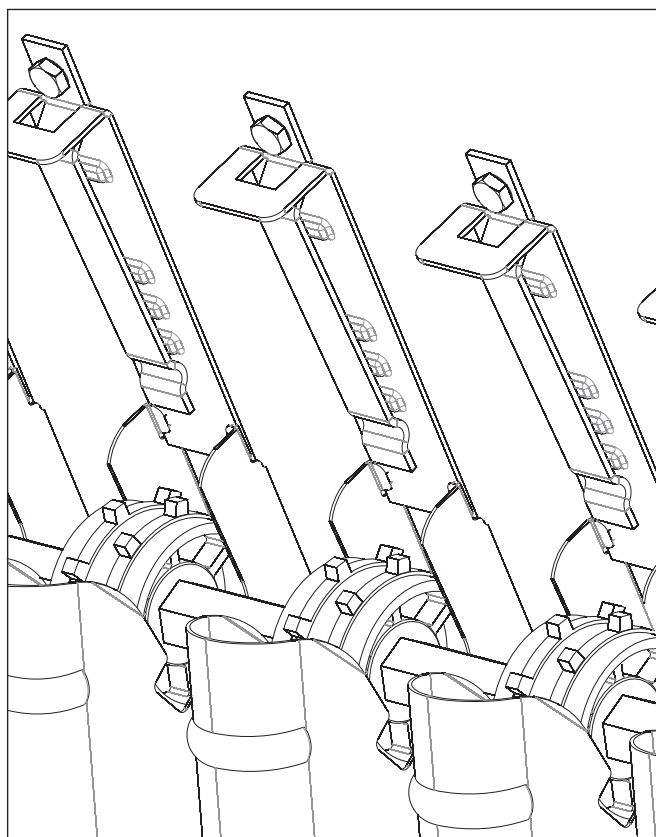


Figure 3C. Seed housing shutters.

Lowering the seed funnels

The row of funnels on the suspension rail is lowered. See figure 3E.

In order to free the suspension rail from its normal position under the seed housings, the spring-loaded release catch at each end of the rail should be pulled outwards. See figure 3D.

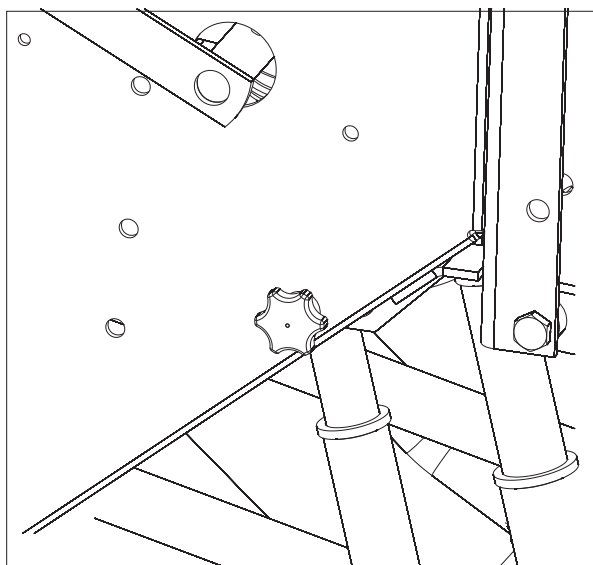


Figure 3D. Release catch for suspension rail.

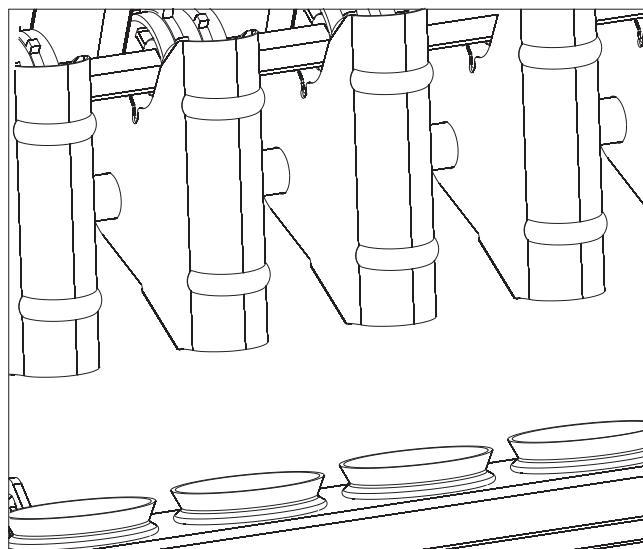


Figure 3E. Seed funnels with suspension rail lowered.

Calibration tray(s) to horizontal

The calibration tray(s) is released and rotated to a horizontal position under the seed funnels. See figure 3F.

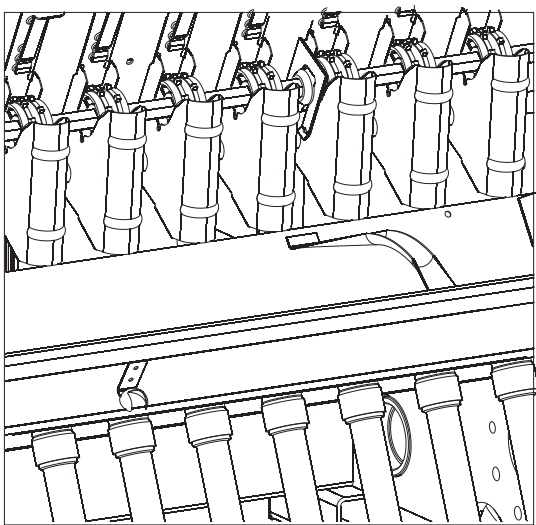


Figure 3F. Calibration tray is rotated to a horizontal position.

Calibration

The calibration is carried out to ensure the correct sowing rate, and is carried out as follows:

The correct sowing rate can be adjusted using the formula:

$$\frac{\text{NO. OF PLANTS PER M2 X TCW}}{\text{SPROUTING PERCENT IN THE FIELD}} = \text{KG / HECTARE}$$

TCW = 1000 corn weight

Filling of sowing material

Fill sufficient seed in the hopper such that the agitator shaft is still covered after test sowing has been carried out.

Scale setting

Initially, the scale should be set to the correct sowing rate according to previous records or to the sowing table on page 24-27 in this instruction manual. See figure 3J.

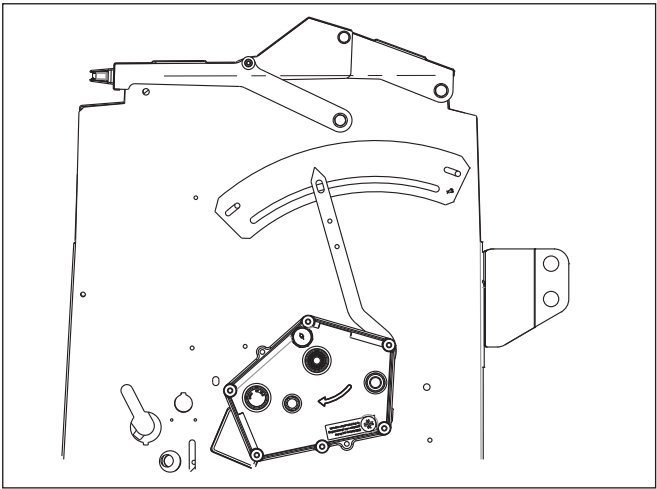


Figure 3J. Scale setting

Starting the seed flow

Attach the test sowing handle and turn it clockwise until the seed flows from all of the outlets. Empty the calibration tray(s) into the hopper.

Turning the test sowing handle

Turn the test sowing handle according to the table below:

ProfiL300	82	1/40 ha
ProfiL400	62	1/40 ha
ProfiL450	55	1/40 ha

Figure 3K. Table number of revolutions.

Calibration

Weighing

Weigh the test sown seed from the sowing tray(s) on an accurate pair of scales.

Calculation of the sowing rate

By multiplying the weight by respectively 20 for 1/20 ha, 40 for 1/40 ha the actual sowing rate is obtained for respectively a hectare.

Adjusting the sowing rate

If the calculated sowing rate corresponds to the required rate, then the machine is correctly adjusted.

If the sowing rate is not correct, subsequent adjustment can be made by changing the scale setting.

If a higher sowing rate is required, the regulating handle's indicator should be adjusted to correspond to a higher value on the scale. If a smaller sowing rate is required the regulating handle's indicator should be adjusted to correspond to a smaller value on the scale.

After adjustment of the scale setting, a new test sowing should be carried out.

Sowing tray(s) closed.

Sowing tray(s) should be closed and rotated to a vertical position as shield for the seed housings etc.

Raising the seed funnels

After the test sowing has been carried out, the seed funnels should be raised again and locked into position under the seed housings.

Discrepancies in the sowing rate

If the test sowing has been carried out carefully, the actual and calculated sowing rates should correspond exactly. If this is not the case in practice, then the cause could be other mechanical factors, such as the wrong air pressure in the seed drill's tyres or use of an inaccurate pair of scales.

However, another potential cause of discrepancies is special soil conditions. Very damp or very loose soil can cause inaccurate rolling of the seed drill wheel.

If problems are caused by the soil conditions, then a supplementary calibration test in the field is recommended.

Test sowing in the field follows essentially the same procedure as the standard test sowing.

However, instead of turning the test sowing handle through a specified number of revolutions, the seed drill is driven in normal working position a specified distance in the field. These distances are given in the table below:

ProfiL300	166,7m	1/20ha
ProfiL400	125m	1/20ha
ProfiL450	111m	1/20ha

Figure 3L. Table number of meters.

Special crops

When sowing special crops, certain precautions may have to be taken.

Sowing of grass seed

Sowing of grass seed requires special attention since the seeds can „bridge“ in the hopper, thus affecting the actual sowing rate. This problem will be particularly acute if the hopper is exposed to vibration.

It is therefore advisable to carry out test sowing with a limited amount of seeds in the hopper, and to avoid filling the hopper completely until in the field where sowing is due to take place.

In addition, regular stops to manually stir the hopper contents are recommended in order to achieve uniform sowing.

Safety note! Owing to the agitator shaft, stirring of the hopper contents should only be carried out when the machine is switched off.

Sowing of peas, beans, maize etc.

When sowing large seeds as peas, beans and maize, the use of soft seed rollers (optional equipment) is recommended since these cause less damage to the seeds and a more uniform seeding is obtained. Further, large seeds can be damaged by the pins on the agitator shaft. If the seed can flow easily, then it is advisable to shut-off the agitator shaft.

Sowing of fine seeds

When sowing small, round seeds, such as turnip, white mustard and rape fitting of fine seed fingers (optional equipment) to the standard seed rollers is recommended. Reduces the sowing amount by 1/3. See figure 3M.

Fit fine seed fingers by sliding them around the standard sowing wheels. Turning the sowing shaft will drag the fingers into the correct sowing position. When fine seed fingers are used the seed housing shutters are placed in position 2.

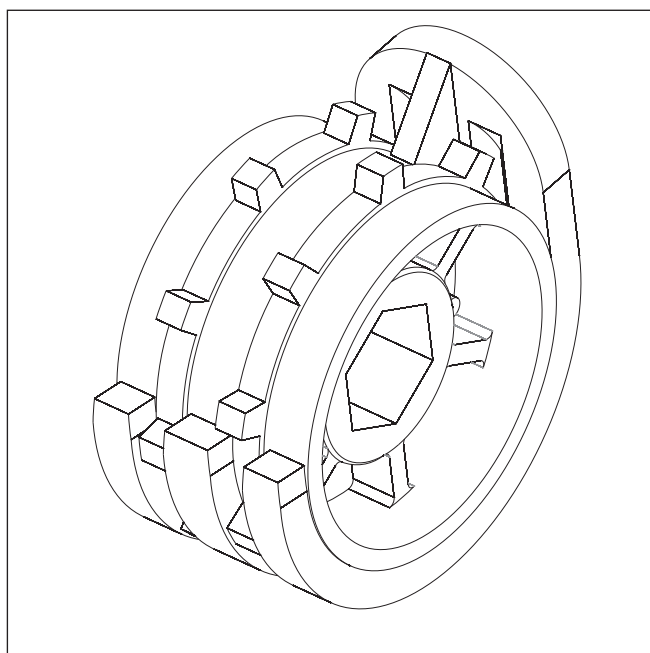


Figure 3M. Fine seed finger.

Coulter pressure/sowing depth

Coulter pressure/sowing depth

In order to obtain the desired sowing depth for all coulters it may be necessary to adjust the tightness of the coulters springs. The wheel track eradicators may also require adjustment.

Coulter tightening

The tension of the spring determines the sowing coulters working depth in the soil. Note also that a too-high forward driving speed can also result in non-uniform sowing depth.

The tension of the coulters can be adjusted centrally (except for the outer coulters). This is done by turning the adjusting spindle for the spring bar with the test sowing handle. See figure 3N.

Since the two outer coulters follow the seed drill's wheel tracks, the spring tension of these coulters can be adjusted separately to a tension of up to 17 kg. This can be done by turning the spindle on the coulters spring using the test sowing handle. See figure 3P.

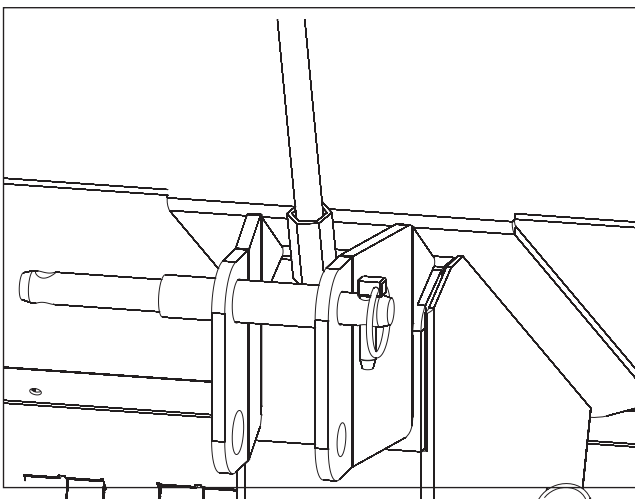


Figure 3N. Central coulters tightening.

In addition, the spring tension can be adjusted individually for all sowing coulters. This is done by altering the position of the springs in the coulters arm.

The greatest tension is obtained by setting the spring in the top position. This ability to individually adjust the tension in each coulters means that it is possible to increase the pressure of the coulters working in the compacted tracks left by the tractor wheel. See figure 3Q.

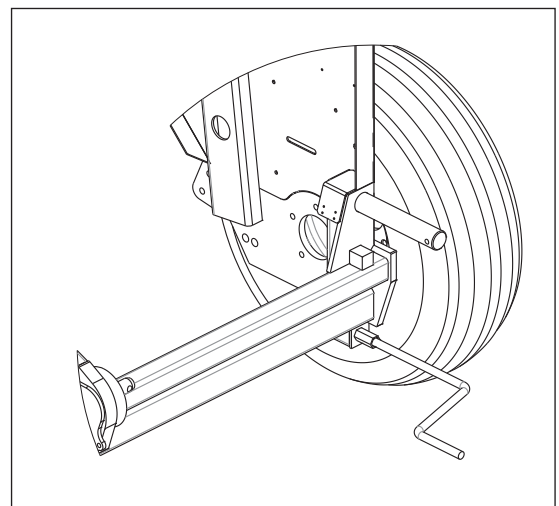


Figure 3P. Coulter tension, outer coulters.

Wheel track eradicators

In order to loosen the soil in the tractor's wheel tracks, two eradicators are placed in each wheel track. See figure 3R.

The eradicators are fixed to the cross beam and can be adjusted laterally. If necessary, an extra set can be used (optional equipment).

The eradicators should be set in such a way that they do not cut too deeply, and preferably located between two coulters rows.

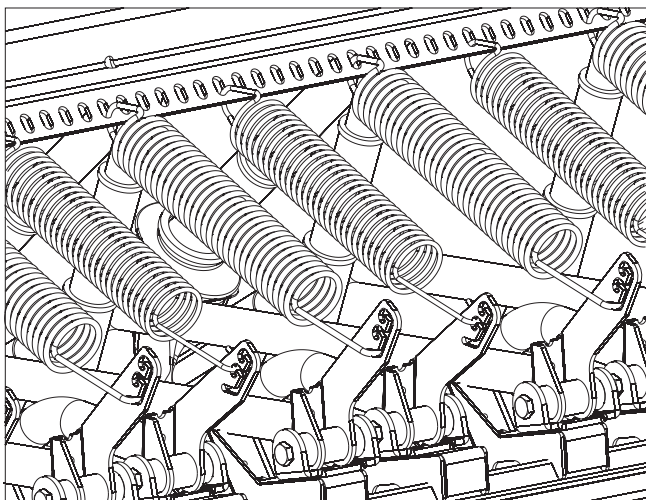


Figure 3Q. Individual coulter tension.

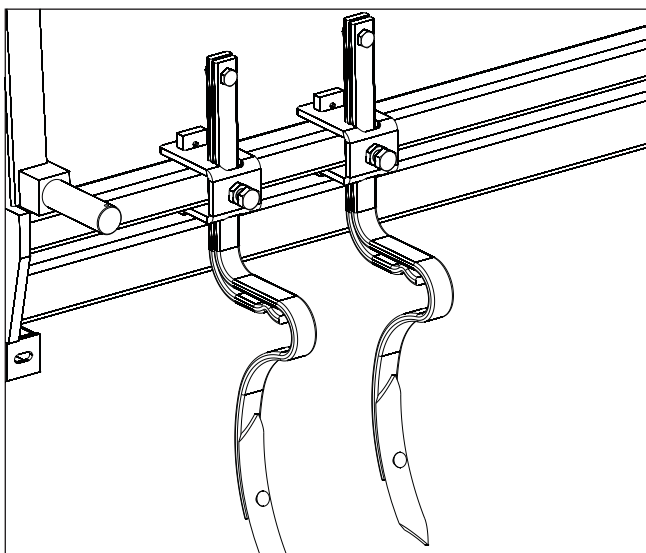


Figure 3R. Wheel eradicators.

Seed drills with a working width of 4.0 and 4.5 m are equipped with two spindles. See figure 3S.

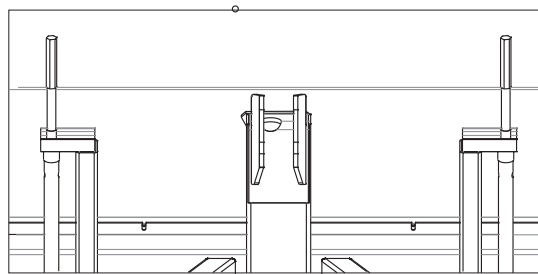


Figure 3S. Two spindles.

Markers

Adjustment of markers

The markers are used to make a marker track. The track ensures that the outer coulter in one row is both parallel to and correctly spaced with respect to the previous row.

Centre marking

The seed drill has centre marking. Thus the distance from the outer coulter track to the marker track should be half the width of the seed bed plus half a row spacing.

This adjustment can be carried out most easily by driving forward a few metres with the markers and the sowing coulters lowered into their working positions, such that the tracks can be clearly seen in the soil. See figure 3S.

Front wheel marking

When front wheel marking is required it is possible to shorten the marker arm and have the marker disc pushed closer to the seed drill.

Marking track

The marking track's width can be regulated by turning the „skew“ marker shaft. See figure 3T.

The narrowest track is obtained by turning the shaft downwards such that the marker is parallel to the direction of travel.

The widest track is obtained by turning the shaft such that the marker is angled backwards with respect to the direction of travel.

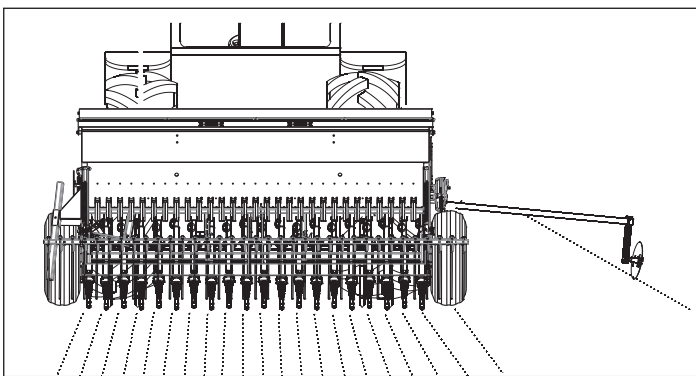


Figure 3S. Centre marking.

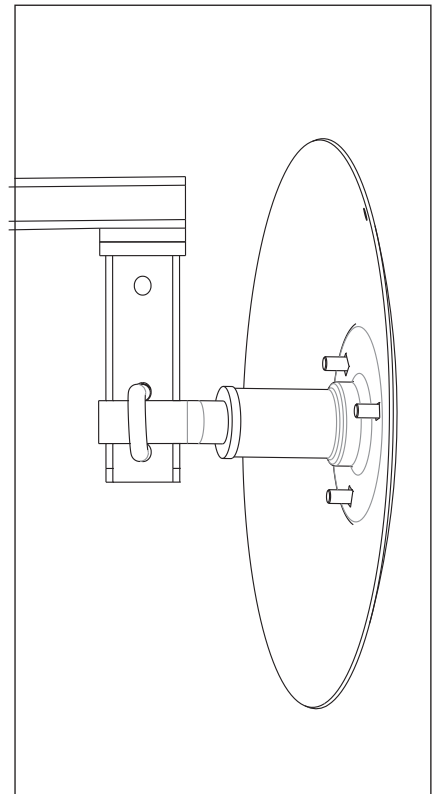


Figure 3T. "Wry" marker shaft.

The shaft should not be turned upwards or angled forwards with respect to the direction of travel as this can damage the shaft and give a poor track.

The markers arms can be locked in a vertical position when driving on public roads or when driving close to fences, etc.

Alternatively, the marker is set 3.0 m out, as measured from the centre of a 3.00 m seed drill, 4.0 m out on a 4.0 m drill and 4.5 m out on a 4.5 m machine.

Adjustment of following harrow (Optional)

The following harrow is mounted by fixing the arms into the brackets fitted on each side of the seed drill.

The following harrow can be set to light or heavy harrowing, or placed in transport position. See figure 3U.

Adjustment is carried out by turning the entire harrow on the draw bars. The required position can be secured by putting pins through the draw bars and flanges in the suspension.

The pins should always be retained by the „R“ clips.

The following harrow can be equipped with pressure tension springs such that it can be forced into the ground even in wet and difficult conditions.

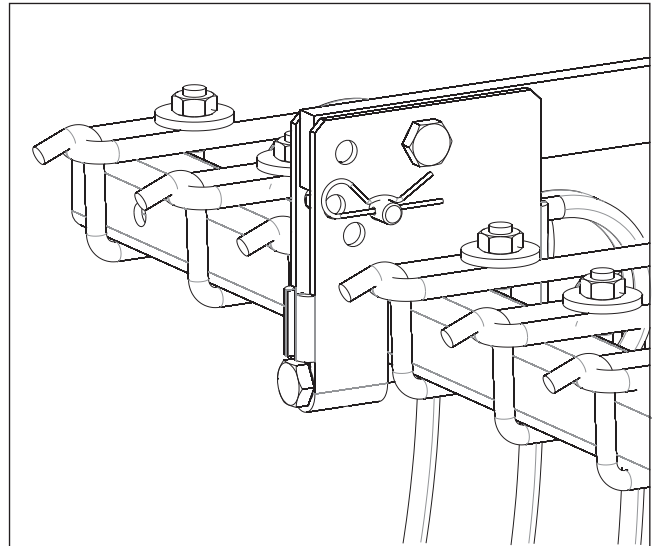


Figure 3U. Following harrow adjusted for heavy harrowing.

Attendance

Generally

During operation check continuously that no sowing coulters are blocked.

In order to avoid blockage of the coulters, it is advisable to only raise and lower the seed drill when driving forwards.

Regularly check the level indicator in the hopper to ensure that there is sufficient sowing material present.

Regularly check whether the actual sowing rate corresponds to the calculated rate.

Both before and during sowing work, attention should be paid to the following.:

- that the lift arms of the tractor are in position control.
- that the tyre pressures on the seed drill are correct.
- that the seed drill's lid is horizontal when the machine is lowered to its working position - if not the seed depth will vary.
- that the gearbox is in a good condition - gear wheels gear bearings.
- that the oil level in the gearbox is visible in the sight glass.
- that the chain drive is correctly adjusted.
- that seed rollers and bottom flaps are intact.
- that bottom flaps are able to move freely - this can be checked using a finger or a thin shaft.
- that locks for seed funnels are secured properly.
- that coulters are intact (not worn out).
- that the coulter arms are able to move freely and have the correct spring tension.
- that the marker position is correct - check frequently.

Driving speed

During the sowing work the speed should be 5-8 km/h. In general speed should depend on the prevailing conditions and, in particular, oscillation of the machine should be avoided.

Emptying of seed hopper

The seed hopper is emptied by opening the calibration flaps as if carrying out a test sowing. The handle for the bottom flaps should then be pulled back completely such that any excess sowing material is emptied into the tray(s).

Maintenance and lubricating

Fine adjustment of bottom flaps

The bottom flaps should be set to the highest position (position 1).

Adjustment can then be carried out by turning the screw on the rear face of each bottom flap until the distance between the flap and the seed roller is 1 mm. See figure 5B.

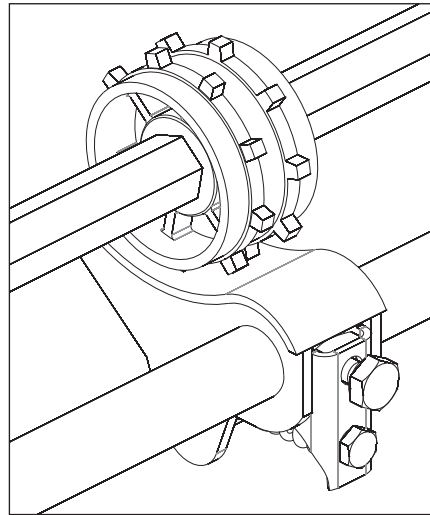


Figure 5A. Screw for adjustment of the bottom flaps.

Cleaning of seed outlets and sowing rollers

Cleaning the seed outlets and seed rollers can be facilitated by removing the sowing shaft. The sowing shaft can be disengaged by lifting the locking plates and turning it backwards. See figure 5B.

The sowing shaft can be locked again by pushing the shaft down and turning the locking plates forward and fastening them in place.

The shaft can then be lifted to check that the locking plates are locked in place.

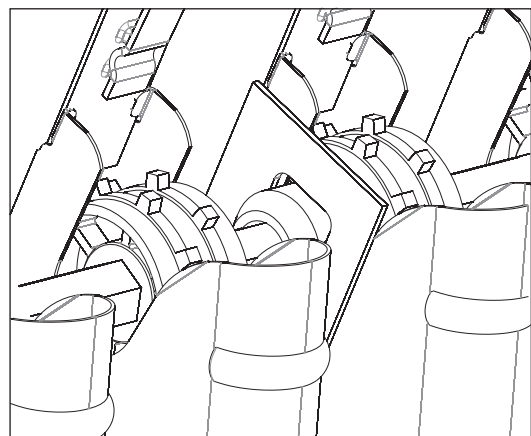


Figure 5B. Locking plates to sowing shaft.

Maintenance and lubrication

Lubrication

The gearbox oil must be visible in the sight glass, otherwise it must be refilled with one of the following types of oil:

HYDROLL-HL 60

All chains should be lubricated regularly. After each season, the chains should be cleaned in petroleum and then lubricated with oil.

Before each new season all linkages and chain tighteners should also be lubricated.

Marker arms should be regularly greased.

All bearings are self-sealed and do not require lubrication.

Winter storage

Careful cleaning of the seed drill after each season is recommended.

The machine should also be prepared **without any hurry** before the start of the new season.

The seed drill should be protected from the elements during storage.

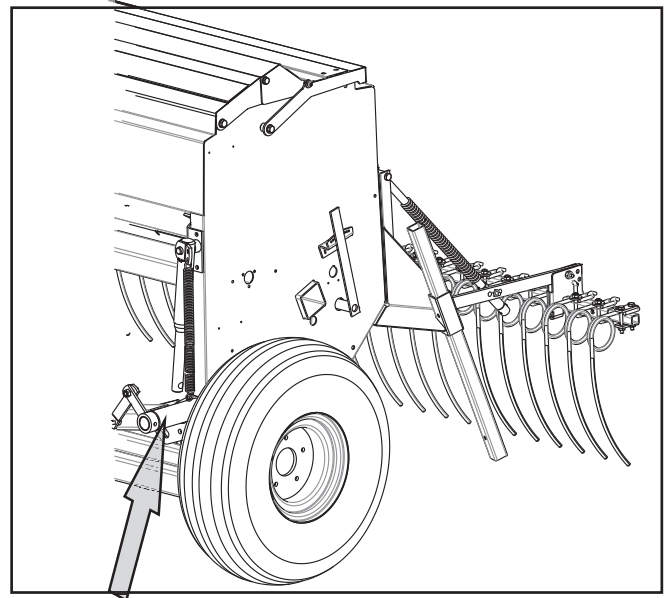


Figure 5C. Spots to be lubricated on the machine.

Sowing table

The sowing table is a guide to the calibration of the drill, and to the scale setting for the desired amount of sowing per hectare. Note that the sowing table is only a guide; a test sowing should always be carried out to check the scale setting.

Sowing table		ProfiLine				
		Seed wheat				
		Pos. of bottom flaps 2				
		Seed housing shutters 1				
		Seed rollers standard				
		Row distance (cm)				
		16	14	13	12	10
Scale setting	5					
	10					
	15					
	20					
	25					
	30					
	35	66,0	75,3	81,0	88,0	105,6
	40	76,5	87,3	93,8	102,0	122,4
	45	87,0	99,3	106,7	116,0	139,2
	50	99,0	113,0	121,4	132,0	158,4
	55	111,0	126,7	136,2	148,0	177,6
	60	121,5	138,7	149,0	162,0	194,4
	65	135,0	154,1	165,6	180,0	216,0
	70	147,0	167,8	180,3	196,0	235,2
	75	163,5	186,6	200,6	218,0	261,6
	80	180,0	205,4	220,8	240,0	288,0
	85	195,0	222,6	239,2	260,0	312,0
	90	213,8	244,0	262,2	285,0	342,0
	95	232,5	265,4	285,2	310,0	372,0
	100	247,5	282,5	303,6	330,0	396,0

Sowing table

Sowing table		ProfiLine				
		Seed barley				
		Pos. of bottom flaps 2				
		Seed housing shutters 1				
		Seed rollers standard				
		Row distance (cm)				
		16	14	13	12	10
Scale setting	5					
	10					
	15					
	20					
	25					
	30					
	35					
	40	65,0	74,2	79,8	86,7	104,0
	45	74,0	84,5	90,8	98,7	118,4
	50	84,2	96,1	103,3	112,3	134,8
	55	94,7	108,1	116,2	126,3	151,6
	60	105,9	120,9	129,9	141,2	169,4
	65	117,2	133,8	143,8	156,3	187,6
	70	129,7	148,0	159,1	172,9	207,5
	75	142,1	162,2	174,3	189,5	227,4
	80	156,2	178,3	191,6	208,3	250,0
	85	171,2	195,4	210,0	228,3	274,0
	90	185,9	212,1	228,0	247,8	297,4
	95	202,2	230,8	248,0	269,6	323,5
	100	220,0	251,1	269,8	293,3	352,0

Sowing table

Sowing table				ProfiLine			
		Seed	peas				
		Pos. of bottom flaps	2				
		Seed housing shutters	4-6				
		Seed rollers	soft				
		Row distance (cm)					
		16	14	13	12	10	
Scale setting	5						
	10						
	15						
	20						
	25						
	30						
	35	119,1	135,9	146,1	158,8	190,6	
	40	138,6	158,2	170,0	184,8	221,8	
	45	159,8	182,3	196,0	213,0	255,6	
	50	182,5	208,3	223,8	243,3	292,0	
	55	204,8	233,7	251,2	273,0	327,6	
	60	226,6	258,6	277,9	302,1	362,5	
	65	251,6	287,2	308,7	335,5	402,6	
	70	276,8	315,9	339,6	369,1	442,9	
	75	302,3	345,0	370,8	403,0	483,6	
	80						
	85						
	90						
	95						
	100						

Sowing table

Sowing table		ProfiLine				
		Seed rape				
		Pos. of bottom flaps 1				
		Seed housing shutters 3				
		Seed rollers Fine seed fingers				
		Row distance (cm)				
		16	14	13	12	10
Scale setting	3	0,9	1,0	1,1	1,2	1,4
	4	1,3	1,5	1,6	1,7	2,0
	5	1,7	1,9	2,0	2,2	2,6
	6	2,0	2,3	2,5	2,7	3,2
	7	2,4	2,7	2,9	3,2	3,8
	8	2,8	3,2	3,4	3,7	4,4
	9	3,2	3,6	3,9	4,2	5,0
	10	3,5	4,0	4,3	4,7	5,6
	11	3,9	4,5	4,8	5,2	6,2
	12	4,3	4,9	5,2	5,7	6,8
	13	4,7	5,3	5,7	6,2	7,4
	14	5,0	5,7	6,2	6,7	8,0
	15	5,4	6,2	6,6	7,2	8,6
	16	5,8	6,6	7,1	7,7	9,2
	17	6,2	7,0	7,5	8,2	9,8
	18	6,5	7,4	8,0	8,7	10,4
	19	6,9	7,4	8,5	9,2	11,0
	20	7,3	8,3	8,9	9,7	11,6
	21	7,7	8,7	9,4	10,2	12,2
	22	8,0	9,2	9,8	10,7	12,8
	23	8,4	9,6	10,3	11,2	13,4
	24	8,8	10,0	10,8	11,7	14,0
	25	9,2	10,4	11,2	12,2	14,6
	26	9,5	10,9	11,7	12,7	15,2
	27	9,9	11,3	12,1	13,2	15,8
	28	10,3	11,7	12,6	13,7	16,4
	29	10,7	12,2	13,1	14,2	17,0
	30	11,0	12,6	13,5	14,7	17,6

Notes

[illegible]

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

